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384

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Ser Pro Gin Glu Arg Leu Ser Arg Glu Thr Ala Leu Gin Gin Lys Gin

195. 200 205

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1008

Thr Asp IIe IIe Ser Ala Leu Val Thr Ser Thr Phe IIe IIe Glu Lys

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Gin Pro Pro Gin Val Leu Lys Thr Gin Thr Lys Phe Ala Ala Thr Val

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1104

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360

365

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Val Lys Ala Thr lie lie Ser Giu Gin Gin Ala Lys Ser Leu Leu Lys

370 375 380

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20 Asn Glu Asn Thr Arg Asn Glu Cys Ser Gly Glu lie Leu Asn Asn Cys

385 390 395 400

tgc gtg atg gag tac cac caa gcc acg ggc acc ctc agt gcc cac ttc

1248

Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe

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410

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7/99

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750 745 5 740

2304 gac ctg gat gag acc atg gat gtg gcc agg cac gtg gag gaa ctc tta

Asp Leu Asp Glu Thr Met Asp Val Ala Arg His Val Glu Glu Leu Leu

765 755 760

cgc cga cca atg gac agt ctt gac tcc cgc ctc tcg ccc cct gcc ggt 2352

Arg Arg Pro Met Asp Ser Leu Asp Ser Arg Leu Ser Pro Pro Ala Gly

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Tyr Leu Ala Gin Trp lie Giu Ser Gin Pro Trp Asp Ala IIe Asp Leu

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Asp Asn Pro Gin Asp Arg Ala Gin Ala Thr Gin Leu Leu Giu Giy Leu

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Val Gln Glu Leu Gln Lys Lys Ala Glu His Gln Val Gly Glu Asp Gly
65 70 75 80

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25

Phe Leu Leu Lys IIe Lys Leu Gly His Tyr Ala Thr Gln Leu Gln Lys

85 90 95

Thr Tyr Asp Arg Cys Pro Leu Glu Leu Val Arg Cys Ile Arg His Ile

100 105 110

Leu Tyr Asn Glu Gln Arg Leu Val Arg Glu Ala Asn Asn Cys Ser Ser

115 120 125

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Glu Leu Lys Lys Leu Gln Gln Thr Gln Glu Tyr Phe lle lle Gln Tyr

165 170 175

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Ser Pro Gin Giu Arg Leu Ser Arg Giu Thr Ala Leu Gin Gin Lys Gin
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Val Ser Leu Glu Ala Trp Leu Gln Arg Glu Ala Gln Thr Leu Gln Gln
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Tyr Arg Val Glu Leu Ala Glu Lys His Gln Lys Thr Leu Gln Leu Leu 225 230 235. 240

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Arg Lys Gin Gin Thr lie lie Leu Asp Asp Giu Leu lie Gin Trp Lys

245
250
255

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260 265 270

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lie Pro Gly Pro Val Glu Glu Met Leu Ala Glu Val Asn Ala Thr lle

305 310 315 320

Thr Asp lie lie Ser Ala Leu Val Thr Ser Thr Phe lie lie Glu Lys

325
330
335

Gin Pro Pro Gin Val Leu Lys Thr Gin Thr Lys Phe Ala Ala Thr Val 340 345 350

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15

25

Arg Leu Leu Val Gly Gly Lys Leu Asn Val His Met Asn Pro Pro Gln 355 360 365

Val Lys Ala Thr lie lie Ser Glu Gin Gin Ala Lys Ser Leu Leu Lys
370 375 380

Asn Glu Asn Thr Arg Asn Glu Cys Ser Gly Glu IIe Leu Asn Asn Cys
385 390 395 400

Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe
405 410 415

Arg Asn Met Ser Leu Lys Arg IIe Lys Arg Ala Asp Arg Arg Gly Ala
420 425 430

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Glu Ser Val Thr Glu Glu Lys Phe Thr Val Leu Phe Glu Ser Gln Phe
435 440 445

Ser Val Gly Ser Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu
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Pro Val Val Val IIe Val His Gly Ser Gln Asp His Asn Ala Thr Ala

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Thr Val Leu Trp Asp Asn Ala Phe Ala Glu Pro Gly Arg Val Pro Phe
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Ala Val Pro Asp Lys Val Leu Trp Pro Gln Leu Cys Glu Ala Leu Asn
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Met Lys Phe Lys Ala Glu Val Gln Ser Asn Arg Gly Leu Thr Lys Glu

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5 530 535 540

Leu Glu Asp Tyr Ser Gly Leu Ser Val Ser Trp Ser Gln Phe Asn Arg
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Glu Asn Leu Pro Gly Trp Asn Tyr Thr Phe Trp Gln Trp Phe Asp Gly

565 570 575

Val Met Glu Val Leu Lys Lys His His Lys Pro His Trp Asn Asp Gly
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Ala lle Leu Gly Phe Val Asn Lys Gln Gln Ala His Asp Leu Leu lle
595 600 605

Asn Lys Pro Asp Giy Thr Phe Leu Leu Arg Phe Ser Asp Ser Giu lle
610 615 620

Gly Gly IIe Thr IIe Ala Trp Lys Phe Asp Ser Pro Glu Arg Asn Leu 625 630 635 640

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Trp Asn Leu Lys Pro Phe Thr Thr Arg Asp Phe Ser IIe Arg Ser Leu 645 650 655

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Ala Asp Arg Leu Gly Asp Leu Ser Tyr Leu lle Tyr Val Phe Pro Asp
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Arg Pro Lys Asp Glu Val Phe Ser Lys Tyr Tyr Thr Pro Val Leu Ala 675 680 685

Lys Ala Val Asp Gly Tyr Val Lys Pro Gln lie Lys Gln Val Val Pro
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Glu Phe Val Asn Ala Ser Ala Asp Ala Gly Gly Ser Ser Ala Thr Tyr
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Met Asp Gin Ala Pro Ser Pro Ala Val Cys Pro Gin Ala Pro Tyr Asn
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5 Met Tyr Pro Gln Asn Pro Asp His Val Leu Asp Gln Asp Gly Glu Phe
740 745 750

Asp Leu Asp Glu Thr Met Asp Val Ala Arg His Val Glu Glu Leu Leu
755 760 765

Arg Arg Pro Met Asp Ser Leu Asp Ser Arg Leu Ser Pro Pro Ala Gly.
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Leu Phe Thr Ser Ala Arg Gly Ser Leu Ser
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WO 2004/042040		PCT/JP2003/013579
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Val Gin Giu Leu Gin Lys Lys Ala Giu His Gin Val Giy Giu Asp Giy

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20/99

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gac gtg cta cag tcc tgg tgt gag aag ttg gcc gag atc atc tgg cag Asp Val Leu Gin Ser Trp Cys Glu Lys Leu Ala Glu IIe IIe Trp Gin

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385 390 395 400

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1248

Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe

405

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420 425 430

gag tcg gtg aca gaa gaa aaa ttt aca atc ctg ttt gaa tcc cag ttc

Glu Ser Val Thr Glu Glu Lys Phe Thr lle Leu Phe Glu Ser Gln Phe

435

440

445

agt gtt ggt gga aat gag ctg gtt ttt caa gtc aag acc ctg tcc ctg

Ser Val Gly Gly Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu

450

455

460

cca gtg gtg gtg atc gtt cat ggc agc cag gac aac aat gcg acg gcc 1440

20 Pro Val Val Val IIe Val His Gly Ser Gln Asp Asn Asn Ala Thr Ala

465 470 475 480

act gtt ctc tgg gac aat gct ttt gca gag cct ggc agg gtg cca ttt

1488

Thr Val Leu Trp Asp Asn Ala Phe Ala Glu Pro Gly Arg Val Pro Phe

485

490

495

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	Met	Lys	Phe	Lys	Ala	Glu	Val	GIn	Ser	Asn	Arg	Gly	Leu	Thr	Lys	Glu	
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	Glu	Asn	Leu	Pro	Gly	Arg	Asn	Tyr	Thr	Phe	Trp	GIn	Trp	Phe	Asp	Gly	
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gag tot got act got aaa got gtt gat gga tac gtg aag cca cag atc

Glu Ser Ala Thr Ala Lys Ala Val Asp Gly Tyr Val Lys Pro Gln Ile

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	Lys	Gln	Val	Val	Pro	Glu	Phe	Val	Asn	Ala	Ser	Ala	Asp	Ala	Gly	Gly	
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J															Cys		
	шу	Sei	AIA	1111		met	veb	um	Ala		361		ліа	v a.		110	
					725					730					735		
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				740					745					750			
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				gac Asp					gac					gcg			2304
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	Thr	Asp	Gly 755	gac Asp	Phe	Asp	Leu	Glu 760 cca	gac Asp	Thr	Met agt	Asp	Val 765 tgg	gcg Ala	Arg	Arg	2304
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2364

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Ala Gin Ser

26/99

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⟨211⟩ 787

<212> PRT

<213> Homo sapiens

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Tyr Leu Ser Gin Trp ile Giu Ser Gin Ala Trp Asp Ser Val Asp Leu

Asp Asn Pro Gin Giu Asn ile Lys Ala Thr Gin Leu Leu Giu Giy Leu

Val Gin Glu Leu Gin Lys Lys Ala Glu His Gin Val Gly Glu Asp Gly

Phe Leu Leu Lys lle Lys Leu Gly His Tyr Ala Thr Gln Leu Gln Asn
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Thr Tyr Asp Arg Cys Pro Met Glu Leu Val Arg Cys IIe Arg His IIe
100 105 110

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20

25

Leu Tyr Asn Glu Gln Arg Leu Val Arg Glu Ala Asn Asn Gly Ser Ser

115 120 125

Pro Ala Gly Ser Leu Ala Asp Ala Met Ser Gln Lys His Leu Gln Ile

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Asn Gin Thr Phe Giu Giu Leu Arg Leu Val Thr Gin Asp Thr Giu Asn
145 150 155. 160

Glu Leu Lys Lys Leu Gin Gin Thr Gin Glu Tyr Phe ile ile Gin Tyr

165 170 175

Gin Glu Ser Leu Arg lie Gin Ala Gin Phe Gly Pro Leu Ala Gin Leu

180 185 190

Ser Pro Gln Glu Arg Leu Ser Arg Glu Thr Ala Leu Gln Gln Lys Gln
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Val Ser Leu Glu Ala Trp Leu Gln Arg Glu Ala Gln Thr Leu Gln Gln
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15

Tyr Arg Val Glu Leu Ala Glu Lys His Gln Lys Thr Leu Gln Leu Leu 225 230 235 240

Arg Lys Gln Gln Thr lle lle Leu Asp Asp Glu Leu lle Gln Trp Lys

245 250 255

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260 265 270

Asp Val Leu Gin Ser Trp Cys Giu Lys Leu Ala Giu lie lie Trp Gin
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Asn Arg Gln Gln He Arg Arg Ala Glu His Leu Cys Gln Gln Leu Pro 290 295 300

lle Pro Gly Pro Val Glu Glu Met Leu Ala Glu Val Asn Ala Thr lle
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25

Thr Asp IIe IIe Ser Ala Leu Val Thr Ser Thr Phe IIe IIe Glu Lys
325 330 335

GIn Pro Pro GIn Val Leu Lys Thr GIn Thr Lys Phe Ala Ala Thr Val

340 345 350

Arg Leu Leu Val Gly Gly Lys Leu Asn Val His Met Asn Pro Pro Gln
355 360 365

Val Lys Ala Thr lle lle Ser Glu Gln Gln Ala Lys Ser Leu Leu Lys
370 380

· Asn Glu Asn Thr Arg Asn Asp Tyr Ser Gly Glu lie Leu Asn Asn Cys

Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe

Arg Asn Met Ser Leu Lys Arg IIe Lys Arg Ser Asp Arg Arg Gly Ala

Glu Ser Val Thr Glu Glu Lys Phe Thr lie Leu Phe Glu Ser Gin Phe

Ser Val Gly Gly Asn Glu Leu Val Phe Gin Val Lys Thr Leu Ser Leu

Pro Val Val Val IIe Val His Gly Ser Gln Asp Asn Asn Ala Thr Ala

Thr Val Leu Trp Asp Asn Ala Phe Ala Glu Pro Gly Arg Val Pro Phe

Ala Val Pro Asp Lys Val Leu Trp Pro Gln Leu Cys Glu Ala Leu Asn
500 505 510

Met Lys Phe Lys Ala Glu Val Gln Ser Asn Arg Gly Leu Thr Lys Glu
515 520 525

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Asn Leu Val Phe Leu Ala Gln Lys Leu Phe Asn Asn Ser Ser Ser His
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Leu Glu Asp Tyr Ser Gly Leu Ser Val Ser Trp Ser Gln Phe Asn Arg

550 555 560

Glu Asn Leu Pro Gly Arg Asn Tyr Thr Phe Trp Gln Trp Phe Asp Gly
565 570 575

Val Met Glu Val Leu Lys Lys His Leu Lys Pro His Trp Asn Asp Gly
580 585 590

Ala Ile Leu Gly Phe Val Asn Lys Gln Gln Ala His Asp Leu Leu Ile

Asn Lys Pro Asp Gly Thr Phe Leu Leu Arg Phe Ser Asp Ser Glu IIe •

Gly Gly lie Thr lie Ala Trp Lys Phe Asp Ser Gln Glu Arg Met Phe

Trp Asn Leu Met Pro Phe Thr Thr Arg Asp Phe Ser IIe Arg Ser Leu

Ala Asp Arg Leu Gly Asp Leu Asn Tyr Leu lle Tyr Val Phe Pro Asp

Arg Pro Lys Asp Glu Val Tyr Ser Lys Tyr Tyr Thr Pro Val Pro Cys

Glu Ser Ala Thr Ala Lys Ala Val Asp Gly Tyr Val Lys Pro Gin Ile

Lys Gin Val Val Pro Glu Phe Val Asn Ala Ser Ala Asp Ala Gly Gly
705 710 715 720

Gly Ser Ala Thr Tyr Met Asp Gln Ala Pro Ser Pro Ala Val Cys Pro
725 730 735

10 Gin Ala His Tyr Asn Met Tyr Pro Gin Asn Pro Asp Ser Val Leu Asp
740 745 750

Thr Asp Gly Asp Phe Asp Leu Glu Asp Thr Met Asp Val Ala Arg Arg

755

760

765

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Ala Gin Ser

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15

cag atg caa gtg ttg tat ggg cag cat ttc ccc atc gag gtc cgg cac 96 15 Gln Met Gln Val Leu Tyr Gly Gln His Phe Pro lle Glu Val Arg His

30 25 20

tac ctg gcc cag tgg atc gag agc cag ccg tgg gat gct att gac ttg 144 Tyr Leu Ala Gin Trp Ile Glu Ser Gin Pro Trp Asp Ala Ile Asp Leu 20

gat aat ccc cag gac cga ggt cag gcc acc caa ctc ctg gag ggc ctg Asp Asn Pro Gin Asp Arg Gly Gin Ala Thr Gin Leu Leu Glu Gly Leu

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192

25 50 55

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	Phe	Leu	Leu	Lys	He	Lys	Leu	Gly	His	Tyr	Ala	Thr	GIn	Leu	Gln	Asn	
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	Pro	Ala	Gly	Val	Leu	Val	Asp	Ala	Met	Ser	Gin	Lys	His	Leu	GIn	ile	
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165 170 175 576 cag gag agc ctg cgg atc caa gct cag ttt gcc cag ctg ggc cag ctg Gin Glu Ser Leu Arg lie Gin Ala Gin Phe Ala Gin Leu Gly Gin Leu 180 185 190 5 aac ccc cag gag cgc atg agc agg gag acg gcc ctc cag cag aag caa 624 Asn Pro Gin Glu Arg Met Ser Arg Glu Thr Ala Leu Gin Gin Lys Gin 205 195 200 10 gtg tcc ctg gag acc tgg ctg cag cga gag gca cag aca ctg cag cag 672 Val Ser Leu Glu Thr Trp Leu Gln Arg Glu Ala Gln Thr Leu Gln Gln 220 210 215

tac cga gtg gag ctg gct gag aag cac cag aag acc ctg cag ctg ctg

Tyr Arg Val Glu Leu Ala Glu Lys His Gln Lys Thr Leu Gln Leu Leu

225 230 235 240

cgg aag cag cag acc atc atc ctg gac gac gag ctg atc cag tgg aag 768

20 Arg Lys Gin Gin Thr lie lie Leu Asp Asp Giu Leu iie Gin Trp Lys

245 250 255

cgg aga cag cag ctg gcc ggg aac ggg ggt ccc ccc gag ggc agc ctg

816

Arg Arg Gin Gin Leu Ala Gly Asn Gly Gly Pro Pro Glu Gly Ser Leu

260

265

270

	gac g	gtg	ctg	cag	tcc	tgg	tgt	gag	aag	ctg	gcc	gag	atc	atc	tgg	cag	864
	Asp \	/a l	Leu	Gln	Ser	Trp	Cys	Glu	Lys	Leu	Ala	Glu	He	He	Trp	Gin	
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	acg																1008
	Thr .	Asp	He	lle	Ser	Ala	Leu	Val	Thr	Ser	Thr	Phe	He	He	Glu	Lys	
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							aag										1056
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																cag	1104
	Arg	Leu			Gly	Gly	Lys			Val	HIS	Met		Pro	Pro	GIN	
			355					360					365				
	_				_4.						7	000	+	o+-	a.		1150
25																aag	1152
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370 375 380

aat gag aac acc cgc aat gag tgc agc ggc gag atc ctg aac aac tgt

Asn Glu Asn Thr Arg Asn Glu Cys Ser Gly Glu IIe Leu Asn Asn Cys

385

390

395

400

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tgc gtc atg gag tac cac cag gcc act ggc acg ctc agc gcc cac ttc

1248

Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe

405

410

415

aga aac atg tca ctg aaa aga atc aag cgc gcc gac agg cgt ggt gca 1296

Arg Asn Met Ser Leu Lys Arg IIe Lys Arg Ala Asp Arg Gly Ala

420 425 430

gag tog gtg acg gag gag aag ttc aca gtc ctg ttt gag tct cag ttc 1344
Glu Ser Val Thr Glu Glu Lys Phe Thr Val Leu Phe Glu Ser Gin Phe
435
440
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agc gtt ggc agc aac gag ctg gtg ttc cag gtg aag acc ctg tcc ctc 1392

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450 455 460

Pro Val Val Val IIe Val His Gly Ser Gln Asp His Asn Ala Thr Ala

470
475
480

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580

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585

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1824

Ala lle Leu Gly Phe Val Asn Lys Gln Gln Ala His Asp Leu Leu lle

595

600

605

aac aag ccg gac ggg acc ttc ctg ctg cgc ttc agt gac tcg gaa atc

Asn Lys Pro Asp Gly Thr Phe Leu Leu Arg Phe Ser Asp Ser Glu lle

610 615 620

ggg ggc atc acc att gct tgg aag ttt gac tct ccg gac cga aac ctc

1920

Gly Gly Ile Thr Ile Ala Trp Lys Phe Asp Ser Pro Asp Arg Asn Leu

625

630

635

640

tgg aat ctg aag cca ttc acg acg cga gat ttc tcc att cgg tcc ctg

Trp Asn Leu Lys Pro Phe Thr Thr Arg Asp Phe Ser lie Arg Ser Leu

645

650

655

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. 660 665 670

cga ccc aag gac gag gtc ttt gcc aag tat tac act cct gta ctt gcg 2064

Arg Pro Lys Asp Glu Val Phe Ala Lys Tyr Tyr Thr Pro Val Leu Ala

675 680 685

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	Lys	Ala	Val	Asp	Gly	Tyr	Val	Lys	Pro	Gln	He	Lys	Gln	Val	Val	Pro	
		690					695					700					
•																	
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	Glu	Phe	Val	Asn	Ala	Ser	Thr	Asp	Ala	Gly	Ala	Ser	Ala	Thr	Tyr	Met	
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20																	
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																Leu	
	AI B	770		. 1101	, 501		775		8	,		780		•		_	
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2382 ·

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Phe Thr Ser Ala Arg Ser Ser Leu Ser

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20 25 30

Tyr Leu Ala Gin Trp lie Giu Ser Gin Pro Trp Asp Ala IIe Asp Leu

35 40 45

Asp Asn Pro Gin Asp Arg Gly Gin Ala Thr Gin Leu Leu Glu Gly Leu
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Val Gin Giu Leu Gin Lys Lys Ala Giu His Gin Val Gly Glu Asp Gly

65 70 75 80

5 Phe Leu Leu Lys IIe Lys Leu Gly His Tyr Ala Thr Gln Leu Gln Asn 85 90 95

Thr Tyr Asp Arg Cys Pro Met Glu Leu Val Arg Cys IIe Arg His IIe

10 100 105 110

Leu Tyr Asn Glu Gln Arg Leu Val Arg Glu Ala Asn Asn Cys Ser Ser

115 120 125

15

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Pro Ala Gly Val Leu Val Asp Ala Met Ser Gln Lys His Leu Gln Ile 130 135 140

Asn Gln Arg Phe Glu Glu Leu Arg Leu lle Thr Gln Asp Thr Glu Asn 145 150 155 160

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165 170 175

Gin Giu Ser. Leu Arg IIe Gin Ala Gin Phe Ala Gin Leu Giy Gin Leu
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Asn Pro Gln Glu Arg Met Ser Arg Glu Thr Ala Leu Gln Gln Lys Gln
195 200 205

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Val Ser Leu Glu Thr Trp Leu Gln Arg Glu Ala Gln Thr Leu Gln Gln
210 215 220

Tyr Arg Val Glu Leu Ala Glu Lys His Gln Lys Thr Leu Gln Leu Leu 225 230 235 240

Arg Lys Gin Gin Thr lie lie Leu Asp Asp Giu Leu lie Gin Trp Lys

20

255

Arg Arg Gin Gin Leu Ala Gly Asn Gly Gly Pro Pro Glu Gly Ser Leu
260 265 270

Asp Val Leu Gin Ser Trp Cys Glu Lys Leu Ala Glu ile ile Trp Gin 275 280 285

5 Asn Arg Gln Gln He Arg Arg Ala Glu His Leu Cys Gln Gln Leu Pro 290 295 300

10 lie Pro Giy Pro Val Giu Giu Met Leu Ala Giu Val Asn Ala Thr lie 305 310 315 320

Thr Asp IIe IIe Ser Ala Leu Val Thr Ser Thr Phe IIe IIe Glu Lys

325 330 335

Gin Pro Pro Gin Val Leu Lys Thr Gin Thr Lys Phe Ala Ala Thr Val
340 345 350

20

25

Arg Leu Leu Val Gly Gly Lys Leu Asn Val His Met Asn Pro Pro Gln
355 360 365

Val Lys Ala Thr lle lle Ser Glu Gln Gln Ala Lys Ser Leu Leu Lys

· · ·

10

15

370 375 380

Asn Glu Asn Thr Arg Asn Glu Cys Ser Gly Glu IIe Leu Asn Asn Cys

5 385 390 395 400

Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe
405 410 415

Arg Asn Met Ser Leu Lys Arg I le Lys Arg Ala Asp Arg Arg Gly Ala
420 425 430

Glu Ser Val Thr Glu Glu Lys Phe Thr Val Leu Phe Glu Ser Gln Phe
435 440 445

20 Ser Val Gly Ser Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu
450 . 455 460

Pro Val Val Val IIe Val His Gly Ser Gln Asp His Asn Ala Thr Ala
25 465 470 475 480

Thr Val Leu Trp Asp Asn Ala Phe Ala Glu Pro Gly Arg Val Pro Phe
485 490 495

Ala Val Pro Asp Lys Val Leu Trp Pro Gin Leu Cys Giu Ala Leu Asn
500 505 510

5

20

25

10 Met Lys Phe Lys Ala Glu Val Gln Ser Asn Arg Gly Leu Thr Lys Glu
515 520 525

Asn Leu Val Phe Leu Ala Gln Lys Leu Phe Asn Ile Ser Ser Asn His

530 535 540

Leu Glu Asp Tyr Asn Ser Met Ser Val Ser Trp Ser Gln Phe Asn Arg
545 550 555 560

Glu Asn Leu Pro Gly Trp Asn Tyr Thr Phe Trp Gln Trp Phe Asp Gly

565 570 575

Val Met Glu Val Leu Lys Lys His His Lys Pro His Trp Asn Asp Gly

Ala lle Leu Gly Phe Val Asn Lys Gln Gln Ala His Asp Leu Leu lle

Asn Lys Pro Asp Gly Thr Phe Leu Leu Arg Phe Ser Asp Ser Glu IIe

Gly Gly lie Thr ile Ala Trp Lys Phe Asp Ser Pro Asp Arg Asn Leu

Trp Asn Leu Lys Pro Phe Thr Thr Arg Asp Phe Ser Ile Arg Ser Leu . 650 655 ·

Ala Asp Arg Leu Gly Asp Leu Asn Tyr Leu Ile Tyr Val Phe Pro Asp

Arg Pro Lys Asp Glu Val Phe Ala Lys Tyr Tyr Thr Pro Val Leu Ala

Lys Ala Val Asp Gly Tyr Val Lys Pro Gln Ile Lys Gln Val Val Pro

Glu Phe Val Asn Ala Ser Thr Asp Ala Gly Ala Ser Ala Thr Tyr Met

Asp Gln Ala Pro Ser Pro Val Val Cys Pro Gln Pro His Tyr Asn Met

Tyr Pro Pro Asn Pro Asp Pro Val Leu Asp Gln Asp Gly Glu Phe Asp

Leu Asp Glu Ser Met Asp Val Ala Arg His Val Glu Glu Leu Leu Arg

Arg Pro Met Asp Ser Leu Asp Ala Arg Leu Ser Pro Pro Ala Gly Leu

Phe Thr Ser Ala Arg Ser Ser Leu Ser

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⟨223⟩

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48

Met Ala Met Trp lie Gin Ala Gin Gin Leu Gin Gly Asp Ala Leu His

1 5 . 10 15

cag atg cag gcc ttg tac ggc cag cat ttc ccc atc gag gtg cga cat 96

20 Gin Met Gin Ala Leu Tyr Gly Gin His Phe Pro Ile Giu Val Arg His

20 25 30

tat tta tca cag tgg atc gaa agc caa gcc tgg gac tca ata gat ctt

144

Tyr Leu Ser Gin Trp iie Giu Ser Gin Ala Trp Asp Ser iie Asp Leu

25 35 40 45

	gat	aat	cca	cag	gag	aac	att	aag	gcc	acc	cag	ctc	ctg	gag	ggc	ctg	192
•	Asp	Asn	Pro	Gin	Glu	Asn	He	Lys	Ala	Thr	Gln	Leu	Leu	Glu	Gly	Leu	
		50 ·					55					60					
5	gtg	cag	gag	ctg	cag	aag	aag	gcg	gag	cac	cag	gtg	ggg	gaa	gat	ggg	240
	Val	Gln	Glu	Leu	Gin	Lys	Lys	Ala	Glu	His	GIn	Val	Gly	Glu	Asp	Gly	
	65					70					75					80	
	ttt	ttg	ctg	aag	atc	aag	ctg	ggg	cac	tat	gcc	aca	cag	ctc	cag	agc	288
10	Phe	Leu	Leu	Lys	He	Lys	Leu	Gly	His	Tyr	Ala	Thr	Gln	Leu	Gln	Ser	
					85					90					95		
	acg	tac	gac	cgc	tgc	ccc	atg	gag	ctg	gtt	cgc	tgt	atc	cgg	cac	att	336
	Thr	Tyr	Asp	Arg	Cys	Pro	Met	Giu	Leu	Val	Arg	Cys	He	Arg	His	lle	
15				100					105					110			
	ctg	tac	aac	gaa	cag	agg	ctg	gtt	cgc	gaa	gcc	aac	aac	ggc	agc	tct	384
	Leu	Tyr	Asn	Glu	Gln	Arg	Leu	Val	Arg	Glu	Ala	Asn	Asn	Gly	Ser	Ser	
			115					120					125				
20																	
	cca	gct	gga	agt	ctt	gct	gac	gcc	atg	tcc	cag	aag	cac	ctt	cag	atc	432
	Pro	Ala	Gly	Ser	Leu	Ala	Asp	Ala	Met	Ser	Gin	Lys	His	Leu	Gln	lle	
		130					135					140					
25	aac	caa	acg	ttt	gag	gag	ctg	cgc	ctg	atc	aca	cag	gac	acg	gag	aac	480
	Asn	GIn	Thr	Phe	Glu	Glu	Leu	Arg	Leu	ile	Thr	Gin	Asp	Thr	Glu	Asn	

	145					150					155					160	
	gag	ctg	aag	aag	ctg	cag	cag	acc	caa	gag	tac	ttc	atc	atc	cag	tac	528
	Glu	Leu	Lys	Lys	Leu	GIn	Gln	Thr	Gln	Glu	Tyr	Phe	lle	He	Gln	Tyr	
5					165					170					175		
												cag					576
	GIN	Glu	Ser		Arg	He	Gin	Ala		Phe	Ala	Gln	Leu		Gin	Leu	
1.0				180					185					190			
10						o+-						-4-					CO 4
						•						ctc					624
	ASII	PTU	195	uıu	Arg	WEL	Ser	200	GIU	III	AIA	Leu	205	uin	Lys	GIN	
			190					200					200				
15	øtø	tee	ctø	par	acc	†øø	ctø	Cag	CES	ភ ង ជ	gca	cag	aca	ctø	cag	cag	672
15												cag Gin					672
15		Ser					Leu					Gin					672
15																	672
15	Val	Ser 210	Leu	Glu	Thr	Trp	Leu 215	GIn	Arg	Glu	Ala	GIn 220	Thr	Leu	GIn	GIn	
	Val	Ser 210 cga	Leu gtg	Glu	Thr	Trp	Leu 215 gag	GIn	Arg cac	Glu	Ala	GIn 220 acc	Thr	Leu	Gin	GIn	672 720
15 20	Val	Ser 210 cga	Leu gtg	Glu	Thr	Trp	Leu 215 gag	GIn	Arg cac	Glu	Ala	GIn 220	Thr	Leu	Gin	GIn	
	Val tac Tyr	Ser 210 cga	Leu gtg	Glu	Thr	Trp gct Ala	Leu 215 gag	GIn	Arg cac	Glu	Ala aag Lys	GIn 220 acc	Thr	Leu	Gin	GIn ctg Leu	
	tac Tyr 225	Ser 210 cga Arg	Leu gtg Val	Glu gag Glu	Thr ctg Leu	Trp gct Ala 230	Leu 215 gag Glu	GIn aag Lys	Arg cac His	Glu cag Gln	Ala aag Lys 235	GIn 220 acc	Thr ctg Leu	Leu cag Gin	GIn ctg Leu	GIn ctg Leu 240	
	tac Tyr 225	Ser 210 cga Arg	gtg Val	Glu gag Glu cag	Thr ctg Leu	Trp gct Ala 230 atc	Leu 215 gag Glu atc	GIn aag Lys ctg	Arg cac His	Glu cag Gln gac	Ala aag Lys 235 gag	GIn 220 acc Thr	Thr ctg Leu	cag Gln cag	Gin ctg Leu	GIn ctg Leu 240	720

255

25

245

	cgg	aga	cag	cag	ctg	gcc	ggg	aac	ggg	ggt	CCC	CCC	gag	ggc	agc	ctg	816
	Arg	Arg	Gln	GIn	Leu	Ala	Gly	Asn	Gly	Gly	Pro	Pro	Glu	Gly	Ser	Leu	
				260					265					270			
		•															
5	gac	gtg	ctg	cag	tcc	tgg	tgt	gag	aag	ctg	gcc	gag	atc	atc	tgg	cag	864
	Asp	Val	Leu	GIn	Ser	Trp	Cys	Glu	Lys	Leu	Ala	Glu	He	lle	Trp	GIn	
			275					280					285				
	aat	cgg	cag	cag	atc	cgc	agg	gct	gag	cac	ctg	tgc	cag	cag	ctg	ccc	912
10	Asn	Arg	GIn	GIn	He	Arg	Arg	Ala	Glu	His	Leu	Cys	GIn	Gln	Leu	Pro	
		290					295				•	300					
	atc	cca	ggc	ccc	gtg	gag	gag	atg	ctg	gct	gag	gtc	aac	gcc	acc	atc	960
	He	Pro	Gly	Pro	Val	Glu	Glu	Met	Leu	Ala	Glu	Val	Asn	Ala	Thr	He	
15	305					310					315					320	
	acg	gac	atc	atc	tca	gcc	ctg	gtc	acc	agc	acg	ttc	atc	atc	gag	aag	1008
	Thr	Asp	He	lle	Ser	Ala	Leu	Val	Thr	Ser	Thr	Phe	He	He	Glu	Lys	
					325					330					335		
20																	
	cag	cct	cct	cag	gtc	ctg	aag	acc	cag	acc	aag	ttt	gcg	gcc	act	gtg	1056
	GIn	Pro	Pro	GIn	Val	Leu	Lys	Thr	Gln	Thr	Lys	Phe	Ala	Ala	Thr	Val	
				340					345					350			
25	cgc	ctg	ctg	gtg	ggg	ggg	aag	ctg	aat	gtg	cac	atg	aac	ccc	ccg	cag	1104
	Arg	Leu	Leu	Val	Gly	Gly	Lys	Leu	Asn	Val	His	Met	Asn	Pro	Pro	Gin	

355 360 365

gtg aag gcg acc atc atc agc gag cag cag gcc aag tcc ctg ctc aag

Val Lys Ala Thr lie lie Ser Glu Gin Gin Ala Lys Ser Leu Leu Lys

5 370 375 380

10

aat gag aac acc cgc aat gat tac agc ggc gag atc ctg aac aac tgt

1200
Asn Glu Asn Thr Arg Asn Asp Tyr Ser Gly Glu IIe Leu Asn Asn Cys
385
390
395
400

tgc gtc atg gag tac cac cag gcc act ggc acg ctc agc gcc cac ttc 1248

405 410 415

Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe

aga aac atg tcc ctg aaa cga atc aag aga tct gac cgc cgt ggt gca 1296

Arg Asn Met Ser Leu Lys Arg IIe Lys Arg Ser Asp Arg Arg Gly Ala

420 425 430

gag toa gta acg gaa gag aag tto acg atc ctg ttt gac toa cag tto 1344

20 Glu Ser Val Thr Glu Glu Lys Phe Thr lie Leu Phe Asp Ser Gin Phe

435 440 445

agc gtc ggt gga aac gag ctg gtc ttt caa gtc aag acc ttg tcg ctc

1392

Ser Val Gly Gly Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu

25 450 455 460

	ccg	gtg	gtg	gtg	att	gtt	cac	ggc	agc	cag	gac	aac	aat	gcc	aca	gcc	1440
	Pro	Val	Val	Val	lle	Val	His	Gly	Ser	GIn	Asp	Asn	Asn	Ala	Thr	Ala	
	465					470					475					480	
5	act	gtc	ctc	tgg	gac	aac	gcc	ttt	gca	gag	cct	ggc	agg	gtg	cca	ttt	1488
•	Thr	Val	Leu	Trp	Asp	Asn	Ala	Phe	Ala	Glu	Pro	Gly	Arg	Val	Pro	Phe	
					485					490					495		
	gcc	gtg	cct	gac	aag	gtg	ctg	tgg	ccg	cag	ctg	tgt	gaa	gcg	ctc	aac	1536
10							Leu										
		,-		500	•			·	505					510			
	ata	222	tto	220	act	gaa	gta	caa	200	220	COO	ggc	+ +σ	200	ឧឧជ	gag	1584
							Vai										
	Met	Lys		Lys	міа	uiu	vai		Ser	ASII	Arg	шіу		1111	Lys	uiu .	
15			515					520					525				
																	1000
							cag										1632
	Asn	Leu	Vai	Phe	Leu	Ala	GIn	Lys	Leu	Phe	Asn	ile	Ser	Ser	Asn	His	
		530					535					540					
20																	
	ctc	gag	gac	tac	aac	agc	atg	tcc	gtg	tcc	tgg	tcc	cag	ttc	aac	cgg	1680
	Leu	Glu	Asp	Tyr	Asn	Ser	Met	Ser	Val	Ser	Trp	Ser	Gln	Phe	Asn	Arg	
	545					550					555					560	
25	gag	aat	ttg	cca	gga	cgg	aat	tac	act	ttc	tgg	cag	tgg	ttt	gat	ggc	1728
	Glu	Asn	Leu	Pro	Gly	Arg	Asn	Tyr	Thr	Phe	Trp	Gln	Trp	Phe	Asp	Gly	

gtg atg gaa gta ttg aaa aaa cat ctc aag cct cac tgg aat gat ggg Val Met Glu Val Leu Lys Lys His Leu Lys Pro His Trp Asn Asp Gly gct atc ctg ggt ttc gtg aac aag caa cag gcc cac gac ctg ctc atc Ala lie Leu Gly Phe Val Asn Lys Gln Gln Ala His Asp Leu Leu Ile aac aag ccg gac ggg acc ttc ctg ctg cgc ttc agc gac tcg gaa atc Asn Lys Pro Asp Gly Thr Phe Leu Leu Arg Phe Ser Asp Ser Glu Ile ggg ggc atc acc att gct tgg aag ttt gac tct cag gag aga atg ttt Gly Gly lie Thr lie Ala Trp Lys Phe Asp Ser Gln Glu Arg Met Phe tgg aat ctg atg cct ttt acc act aga gac ttc tct atc cgg tcc ctc Trp Asn Leu Met Pro Phe Thr Thr Arg Asp Phe Ser Ile Arg Ser Leu gct gac cgc ctg ggg gac ctg aat tac ctc ata tat gtg ttt cct gat Ala Asp Arg Leu Gly Asp Leu Asn Tyr Leu Ile Tyr Val Phe Pro Asp

	cgg	cca	aag	gat	gaa	gta	tat	tct	aag	tac	tac	aca	ccg	gtc	CCC	tgt	2064
	Arg	Pro	Lys	Asp	Glu	Val	Tyr	Ser	Lys	Tyr	Tyr	Thr	Pro	Val	Pro	Cys	
			675					680					685				
5	gag	CCC	gca	act	gcg	aaa	gca	gct	gac	gga	tac	gtg	aag	cca	cag	atc	2112
	Glu	Pro	Ala	Thr	Ala	Lys	Ala	Ala	Asp	Gly	Tyr	Val	Lys	Pro	Gin	He	
		690					695					700					
	aag	cag	gtg	gtc	CCC	gag	ttt	gca	aat	gca	tcc	aca	gat	gct	ggg	agt	2160
10	Lys	Gin	Val	Val	Pro	Glu	Phe	Ala	Asn	Ala	Ser	Thr	Asp	Ala	Gly	Ser	
	705					710					715					720	
	ggc	gcc	acc	tac	atg	gat	cag	gct	cct	tcc	cca	gtc	gtg	tgc	cct	cag	2208
	Gly	Ala	Thr	Tyr	Met	Asp	Gln	Ala	Pro	Ser	Pro	Val	Val	Cys	Pro	GIn	
15					725					730					735		
	gct	cac	tac	aac	atg	tac	cca	CCC	aac	ccg	gac	tcc	gtc	ctt	gat	acc	2256
	Ala	His	Tyr	Asn	Met	Tyr	Pro	Pro	Asn	Pro	Asp	Ser	Val	Leu	Asp	Thr	
				740					745					750			
20													•				
	gat	ggg	gac	ttc	gat	ctg	gaa	gac	acg	atg	gac	gtg	gcg	cgg	cgc	gtg	2304
	Asp	Gly	Asp	Phe	Asp	Leu	Glu	Asp	Thr	Met	Asp	Val	Ala	Arg	Arg	Val	
			755					760					765				
25	gaa	gag	ctc	tta	ggc	cgg	CCC	atg	gac	agt	cag	tgg	atc	cct	cac	gca	2352
	Glu	Glu	Leu	Leu	Gly	Arg	Pro	Met	Asp	Ser	Gln	Trp	He	Pro	His	Ala	

58/99

Gln Ser

<210> 8

cag tca tga

<211> 786

<212> PRT

<213> Mus musculus

<400> 8

Met Ala Met Trp Ile Gln Ala Gln Gln Leu Gln Gly Asp Ala Leu His

Gin Met Gin Ala Leu Tyr Gly Gin His Phe Pro Ile Glu Val Arg His

Tyr Leu Ser Gin Trp Ile Glu Ser Gin Ala Trp Asp Ser Ile Asp Leu

 Asp Asn Pro Gin Giu Asn ile Lys Ala Thr Gin Leu Leu Giu Giy Leu
50 55 60

5 Val Gln Glu Leu Gln Lys Lys Ala Glu His Gln Val Gly Glu Asp Gly 65 70 75 80

Phe Leu Leu Lys IIe Lys Leu Gly His Tyr Ala Thr Gln Leu Gln Ser

85 90 95

Thr Tyr Asp Arg Cys Pro Met Glu Leu Val Arg Cys lie Arg His lle
100 105 110

15

20

Leu Tyr Asn Glu Gln Arg Leu Val Arg Glu Ala Asn Asn Gly Ser Ser

115 120 125

Pro Ala Gly Ser Leu Ala Asp Ala Met Ser Gln Lys His Leu Gln lle
130 135 140

Asn Gin Thr Phe Giu Giu Leu Arg Leu IIe Thr Gin Asp Thr Giu Asn
145
150
155
160

Glu Leu Lys Lys Leu Gln Gln Thr Gln Glu Tyr Phe IIe IIe Gln Tyr

165 170 175

5

Gin Glu Ser Leu Arg ile Gin Ala Gin Phe Ala Gin Leu Gly Gin Leu
180 185 190

. 10

25

Asn Pro Gin Giu Arg Met Ser Arg Giu Thr Ala Leu Gin Gin Lys Gin
195 200 205

Val Ser Leu Glu Thr Trp Leu Gln Arg Glu Ala Gln Thr Leu Gln Gln
210 215 220

Tyr Arg Val Glu Leu Ala Glu Lys His Gln Lys Thr Leu Gln Leu Leu 20 225 230 235 240

Arg Lys Gin Gin Thr lie lie Leu Asp Asp Giu Leu lie Gin Trp Lys

245

250

255

Arg Arg Gin Gin Leu Ala Gly Asn Gly Gly Pro Pro Glu Gly Ser Leu
260 265 270

5 Asp Val Leu Gin Ser Trp Cys Glu Lys Leu Ala Glu IIe IIe Trp Gin 275 280 285

Asn Arg Gln Gln Ile Arg Arg Ala Glu His Leu Cys Gln Gln Leu Pro
290 295 300

Ile Pro Gly Pro Val Glu Glu Met Leu Ala Glu Val Asn Ala Thr Ile305310315320

15

20

Thr Asp IIe IIe Ser Ala Leu Val Thr Ser Thr Phe IIe IIe Glu Lys
325 330 335

Gin Pro Pro Gin Val Leu Lys Thr Gin Thr Lys Phe Ala Ala Thr Val

25 Arg Leu Leu Val Gly Gly Lys Leu Asn Val His Met Asn Pro Pro Gln
355 360 365

Val Lys Ala Thr lie lie Ser Glu Gin Gin Ala Lys Ser Leu Leu Lys
370 375 380

5

Asn Glu Asn Thr Arg Asn Asp Tyr Ser Gly Glu lle Leu Asn Asn Cys
385 390 395 400

10

Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe
405 410 415

Arg Asn Met Ser Leu Lys Arg IIe Lys Arg Ser Asp Arg Gly Ala
420 425 430

Glu Ser Val Thr Glu Glu Lys Phe Thr lle Leu Phe Asp Ser Gln Phe

445

Ser Val Gly Gly Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu
450 455 460

Pro Val Val Val lle Val His Gly Ser Gln Asp Asn Asn Ala Thr Ala

Thr Val Leu Trp Asp Asn Ala Phe Ala Glu Pro Gly Arg Val Pro Phe

Ala Val Pro Asp Lys Val Leu Trp Pro Gln Leu Cys Glu Ala Leu Asn

Met Lys Phe Lys Ala Glu Val Gln Ser Asn Arg Gly Leu Thr Lys Glu

Asn Leu Val Phe Leu Ala Gln Lys Leu Phe Asn Ile Ser Ser Asn His

Leu Glu Asp Tyr Asn Ser Met Ser Val Ser Trp Ser Gln Phe Asn Arg

Glu Asn Leu Pro Gly Arg Asn Tyr Thr Phe Trp Gln Trp Phe Asp Gly

Val Met Glu Val Leu Lys Lys His Leu Lys Pro His Trp Asn Asp Gly
580 585 590

5 ·

Ala lle Leu Gly Phe Val Asn Lys Gln Gln Ala His Asp Leu Leu lle
595 600 605

10

20

25

Asn Lys Pro Asp Gly Thr Phe Leu Leu Arg Phe Ser Asp Ser Glu IIe
610 615 620

Gly Gly lie Thr lie Ala Trp Lys Phe Asp Ser Gln Glu Arg Met Phe 625 630 635 640

Trp Asn Leu Met Pro Phe Thr Thr Arg Asp Phe Ser IIe Arg Ser Leu
645 650 655

Ala Asp Arg Leu Gly Asp Leu Asn Tyr Leu IIe Tyr Val Phe Pro Asp
660 665 670

20

Arg	Pro	Lys	Asp	Glu	Val	Tyr	Ser	Lys	Tyr	Tyr	Thr	Pro	Val	Pro	Cys
		675					680					685			

5 Glu Pro Ala Thr Ala Lys Ala Ala Asp Gly Tyr Val Lys Pro Gln lle 690 695 700

Lys Gln Val Val Pro Glu Phe Ala Asn Ala Ser Thr Asp Ala Gly Ser

705 710 715 720

Gly Ala Thr Tyr Met Asp Gln Ala Pro Ser Pro Val Val Cys Pro Gln
725 730 735

Ala His Tyr Asn Met Tyr Pro Pro Asn Pro Asp Ser Val Leu Asp Thr
740 745 750

Asp Gly Asp Phe Asp Leu Glu Asp Thr Met Asp Val Ala Arg Arg Val
755 760 765

25 Glu Glu Leu Leu Gly Arg Pro Met Asp Ser Gln Trp IIe Pro His Ala 770 775 780 GIn Ser

785

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15 <220>

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<222> (1).. (2382)

<223>

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48

Met Ala Gly Trp lle Gln Ala Gln Gln Leu Gln Gly Asp Ala Leu Arg

5 10 15

25 cag atg caa gtg ttg tat ggg cag cat ttc ccc atc gag gtc cgg cac 96
Gln Met Gln Val Leu Tyr Gly Gln His Phe Pro Ile Glu Val Arg His

tac ctg gcc cag tgg atc gag agc cag ccg tgg gat gct att gac ttg Tyr Leu Ala Gin Trp IIe Glu Ser Gin Pro Trp Asp Ala IIe Asp Leu gat aat ccc cag gac cga ggt cag gcc acc caa ctc ctg gag ggc ctg Asp Asn Pro Gin Asp Arg Gly Gin Ala Thr Gin Leu Leu Glu Gly Leu gtg cag gag ctg cag aag aag gcg gag cac cag gtg ggg gaa gat ggg Val Gin Glu Leu Gin Lys Lys Ala Glu His Gin Val Gly Glu Asp Gly ttt ttg ctg aag atc aag ctg ggg cac tat gcc aca cag ctc cag aac Phe Leu Leu Lys IIe Lys Leu Gly His Tyr Ala Thr Gln Leu Gln Asn acg tat gac cgc tgt ccc atg gag ctg gtt cgc tgt atc cgt cac att

acg tat gac cgc tgt ccc atg gag ctg gtt cgc tgt atc cgt cac att 336

20 Thr Tyr Asp Arg Cys Pro Met Glu Leu Val Arg Cys Ile Arg His Ile

100 105 110

ctg tac aac gaa cag agg ctg gtt cgc gaa gcc aac aat tgc agc tcc 384

Leu Tyr Asn Glu Gln Arg Leu Val Arg Glu Ala Asn Asn Cys Ser Ser

115 120 125

	cct	gct	ggt	gtc	ctg	gtt	gac	gcc	atg	tcc	cag	aag	cac	ctt	cag	atc	432
	Pro	Ala	Ģly	Val	Leu	Val	Asp	Ala	Met	Ser	Gln	Lys	His	Leu	GIn	lle	
		130-					135					140					
5	aac	caa	agg	ttt	gag	gag	ctg	cgc	ctg	atc	aca	cag	gac	acg	gag	aac	480
	Asn	Gln	Arg	Phe	Glu	Glu	Leu	Arg	Leu	He	Thr	Gln	Asp	Thr	Glu	Asn	
	145					150					155					160	
	gag	ctg	aag	aag	ctg	cag	cag	acc	caa	gag	tac	ttc	atc	atc	cag	tac	528
10	Glu	Leu	Lys	Lys	Leu	Gln	Gln	Thr	GIn	Glu	Tyr	Phe	He	He	Gln	Tyr	
					165					170					175		
	cag	gag	agc	ctg	cgg	atc	caa	gct	cag	ttt	gcc	cag	ctg	ggc	cag	ctg	576
	GIn	Glu	Ser	Leu	Arg	lle	Gln	Ala	Gln	Phe	Ala	Gln	Leu	Gly	GIn	Leu	
15				180					185					190			
	aac	ccc	cag	gag	cgc	atg	agc	agg	gag	acg	gcc	ctc	cag	cag	aag	caa	624
	Asn	Pro	Gln	Glu	Arg	Met	Ser	Arg	Glu	Thr	Ala	Leu	GIn	Gin	Lys	Gin	
			195					200					205				
20																	
	gtg	tcc	ctg	gag	acc	tgg	ctg	cag	cga	gag	gca	cag	aca	ctg	cag	cag	672
	Val	Ser	Leu	Glu	Thr	Trp	Leu	Gln	Arg	Glu	Ala	Gin	Thr	Leu	GIn	Gln	
		210					215					220					
25	tac	cga	gtg	gag	ctg	gct	gag	aag	cac	cag	aag	acc	ctg	cag	ctg	ctg	720
		Arg															
	ıyr	Arg	vai	GIU	Leu	Ala	Giu	Lys	HIS	uın	Lys	ınr	Leu	GIN	Leu	Leu	

69/99

cgg aag cag cag acc atc atc ctg gac gac gag ctg atc cag tgg aag Arg Lys Gin Gin Thr IIe IIe Leu Asp Asp Giu Leu IIe Gin Trp Lys cgg aga cag cag ctg gcc ggg aac ggg ggt ccc ccc gag ggc agc ctg Arg Arg Gin Gin Leu Ala Gly Asn Gly Gly Pro Pro Giu Gly Ser Leu gac gtg ctg cag tcc tgg tgt gag aag ctg gcc gag atc atc tgg cag Asp Val Leu Gin Ser Trp Cys Glu Lys Leu Ala Glu Ile Ile Trp Gin 275 · aac cgg cag cag atc cgc agg gct gag cgc ctg tgc cag cag ctg ccc Asn Arg Gin Gin He Arg Arg Ala Glu Arg Leu Cys Gin Gin Leu Pro atc cca ggc ccc gtg gag gag atg ctg gct gag gtc aac gcc acc atc lle Pro Gly Pro Val Glu Glu Met Leu Ala Glu Val Asn Ala Thr lle acg gac atc atc tca gct ctg gtc acc agc acg ttc atc atc gag aag Thr Asp lie lie Ser Ala Leu Val Thr Ser Thr Phe lie lie Giu Lys

	cag	cct	cct	cag	gtc	ctg	aag	acc	cag	acc	aag	ttt	gcg	gcc	acc	gtg	1056
	Gin	Pro	Pro	Gln	Val	Ļeu	Lys	Thr	GIn	Thr	Lys	Phe	Ala	Ala	Thr	Val	
				340					345					350			
5	cgc	ctg	ctg	gtg	ggg	gga	aag	ctg	aat	gtg	cac	atg	aac	ccc	ccg	cag	1104
	Arg	Leu	Leu	Val	Gly	Gly	Lys	Leu	Asn	Val	His	Met	Asn	Pro	Pro	Gln	
		,	355					360					365				
		·															
	gtg	aag	gcg	acc	atc	atc	agc	gag	cag	cag	gcc	aag	tcc	ctg	ctc	aag	1152
10	Val	Lys	Ala	Thr	He	lle	Ser	Glu	Gln	GIn	Ala	Lys	Ser	Leu	Leu	Lys	
		370					375					380					
	aat	gag	aac	acc	cgc	aat	gag	tgc	agc	ggc	gag	atc	ctg	aac	aac	tgt	1200
	Asn	Glu	Asn	Thr	Arg	Asn	Glu	Cys	Ser	Gly	Glu	He	Leu	Asn	Asn	Cys	
15	385					390					395					400	
	tgc	gtc	atg	gag	tac	cac	cag	gcc	act	ggc	acg	ctc	agc	gcc	cac	ttc	1248
	Cys	Val	Met	Glu	Tyr	His	Gin	Ala	Thr	Gly	Thr	Leu	Ser	Ala	His	Phe	
					405					410					415		
20																	
	aga	aac	atg	tca	ctg	aaa	aga	atc	aag	cgc	gcc	gac	agg	cgt	ggt	gca	1296
	Arg	Asn	Met	Ser	Leu	Lys	Arg	lle	Lys	Arg	Ala	Asp	Arg	Arg	Gly	Ala	
				420					425					430			
25	gag	tcg	gtg	acg	gag	gag	aag	ttc	aca	gtc	ctg	ttt	gag	tct	cag	ttc	1344
	Glu	Ser	Val	Thr	Glu	Glu	Lys	Phe	Thr	Val	Leu	Phe	Glu	Ser	Gln	Phe	

71/99

agc gtt ggc agc aac gag ctg gtg ttc cag gtg aag acc ctg tcc ctc Ser Val Gly Ser Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu

cct gtg gtc gtt atc gtc cat ggc agc cag gac cac aat gct act gcc Pro Val Val Val IIe Val His Gly Ser Gln Asp His Asn Ala Thr Ala

acc gtg ctg tgg gac aat gcc ttt gct gag ccg ggc agg gtg cca ttt

Thr Val Leu Trp Asp Asn Ala Phe Ala Glu Pro Gly Arg Val Pro Phe

gct gtg cct gac aag gtg ctg tgg ccg cag ctg tgt gaa gcg ctc aac Ala Val Pro Asp Lys Val Leu Trp Pro Gin Leu Cys Glu Ala Leu Asn

atg aaa tto aag got gaa gta cag agc aac cgg ggc ttg acc aaa gag Met Lys Phe Lys Ala Glu Val Gln Ser Asn Arg Gly Leu Thr Lys Glu

aac ctc gtg ttc ctg gca cag aaa ctg ttc aac atc agc agc aac cac Asn Leu Val Phe Leu Ala Gin Lys Leu Phe Asn Ile Ser Ser Asn His

	ctc	gag	gac	tac	aac	agc	atg	tct	gtg	tcc	tgg	tcc	cag	ttc	aac	cgg	1680
	Leu	Glu	Asp	Tyr	Asn	Ser	Met	Ser	Val	Ser	Trp	Ser	GIn	Phe	Asn	Arg	
٠	545					550					555					560	
5	gag	aac	ttg	ccc	ggc	tgg	aac	tac	acc	ttc	tgg	cag	tgg	ttc	gac	ggg	1728
	Glu	Asn	Leu	Pro	Gly	Trp	Asn	Tyr	Thr	Phe	Trp	Gin	Trp	Phe	Asp	Gly	
					565					570					575		
	gtg	atg	gag	gtg	ctg	aag	aag	cac	cat	aag	ccc	cat	tgg	aat	gat	ggg	1776
10	Val	Met	Glu	Va!	Leu	Lys	Lys	His	His	Lys	Pro	His	Trp	Asn	Asp	Gly	
				580					585					590			
	gct	atc	ctg	ggt	ttc	gtg	aac	aag	caa	cag	gcc	cac	gac	ctg	ctc	atc	1824
	Ala	lle	Leu	Gly	Phe	Val	Asn	Lys	Gln	Gln	Ala	His	Asp	Leu	Leu	lle	
15			595					600					605				
	aac	aag	ccg	gac	ggg	acc	ttc	ctg	ctg	cgc	ttc	agt	gac	tcg	gaa	atc	1872
	Asn	Lys	Pro	Asp	Gly	Thr	Phe	Leu	Leu	Arg	Phe	Ser	Asp	Ser	Glu	lle [.]	
		610					615					620					
20																	
	ggg	ggc	atc	acc	att	gct	tgg	aag	ttt	gac	tct	ccg	gac	cga	aac	ctc	1920
	Gly	Gly	lle	Thr	lle	Ala	Trp	Lys	Phe	Asp	Ser	Pro	Asp	Arg	Asn	Leu	
	625					630					635					640	
	•																
25	tgg	aat	ctg	aag	cca	ttc	acg	acg	cga	gat	ttc	tcc	att	cgg	tcc	ctg	1968
	Trp	Asn	Leu	Lys	Pro	Phe	Thr	Thr	Arg	Asp	Phe	Ser	lle	Arg	Ser	Leu	

73/99

gcc gac cgg ctg ggg gac ctg aac tac ctt atc tac gtg ttc cca gac Ala Asp Arg Leu Gly Asp Leu Asn Tyr Leu Ile Tyr Val Phe Pro Asp

cga ccc aag gac gag gtc ttt gcc aag tat tac act cct gta ctt gcg Arg Pro Lys Asp Glu Val Phe Ala Lys Tyr Tyr Thr Pro Val Leu Ala

asa gca gtt gac gga tac gtg aag cca cag atc aag caa gtg gtc cct Lys Ala Val Asp Gly Tyr Val Lys Pro Gin lie Lys Gin Val Val Pro

gag ttc gtc aat gca ttc aca gat gcc gga gcc agc gcc acc tac atg Glu Phe Val Asn Ala Phe Thr Asp Ala Gly Ala Ser Ala Thr Tyr Met

gac cag gct cct tcc cca gtc gtg tgc cct caa cct cac tac aac atg Asp Gln Ala Pro Ser Pro Val Val Cys Pro Gln Pro His Tyr Asn Met

tac cca ccc aac cct gac cct gtc ctt gac caa gat ggc gag ttt gac Tyr Pro Pro Asn Pro Asp Pro Val Leu Asp Gin Asp Giy Glu Phe Asp

ctg gat gag agc atg gat gtt gcc agg cac gtg gaa gaa ctt tta cgc 2304

Leu Asp Glu Ser Met Asp Val Ala Arg His Val Glu Glu Leu Leu Arg

755 . 760 765

5 cgg ccc atg gac agt ctc gac gcc cgc ctc tcc cca cct gct ggt ctc 2352

Arg Pro Met Asp Ser Leu Asp Ala Arg Leu Ser Pro Pro Ala Gly Leu

770 775 780

ttc acc tcc gct aga agc tcc ctg tcc tga 2382

Phe Thr Ser Ala Arg Ser Ser Leu Ser
785 790

<210> 10

15 <211> 793

<212> PRT

<213> Artificial

<220>

20 <223> activated STAT5A

<400> 10

25

Met Ala Gly Trp lie Gin Ala Gin Gin Leu Gin Gly Asp Ala Leu Arg

1 5 10 15

Gln Met Gln Val Leu Tyr Gly Gln His Phe Pro Ile Glu Val Arg His
20 25 30

Tyr Leu Ala Gin Trp Ile Giu Ser Gin Pro Trp Asp Ala Ile Asp Leu
35 40 45

5

15

20

25

Asp Asn Pro Gin Asp Arg Gly Gin Ala Thr Gin Leu Leu Glu Gly Leu
50 55 60

Val Gln Glu Leu Gln Lys Lys Ala Glu His Gln Val Gly Glu Asp Gly

65 70 75 80

Phe Leu Leu Lys IIe Lys Leu Gly His Tyr Ala Thr Gln Leu Gln Asn

85 90 95

Thr Tyr Asp Arg Cys Pro Met Glu Leu Val Arg Cys IIe Arg His IIe

100 105 110

Leu	Tyr	Asn	Glu	Gin	Arg	Leu	Val	Arg	Glu	Ala	Asn	Asn	Cys	Ser	Ser
		115					120					125			

5 Pro Ala Gly Val Leu Val Asp Ala Met Ser Gln Lys His Leu Gln IIe 130 135 140

Asn Gin Arg Phe Giu Giu Leu Arg Leu lie Thr Gin Asp Thr Giu Asn

10 145 150 155 160

Glu Leu Lys Lys Leu Gin Gin Thr Gin Glu Tyr Phe Ile Ile Gin Tyr

165 170 175

15

20

Gin Glu Ser Leu Arg Ile Gin Ala Gin Phe Ala Gin Leu Giy Gin Leu
180 185 190

Asn Pro Gin Glu Arg Met Ser Arg Glu Thr Ala Leu Gin Gin Lys Gin
195 200 205

Val Ser Leu Glu Thr Trp Leu Gln Arg Glu Ala Gln Thr Leu Gln Gln
210
215
220

Tyr Arg Val Glu Leu Ala Glu Lys His Gln Lys Thr Leu Gln Leu Leu 225 230 235 240

5

Arg Lys Gin Gin Thr lie lie Leu Asp Asp Giu Leu lie Gin Trp Lys

245 250 255

10

Arg Arg Gin Gin Leu Ala Giy Asn Giy Giy Pro Pro Giu Giy Ser Leu
260 265 270

Asp Val Leu Gin Ser Trp Cys Glu Lys Leu Ala Glu lle lle Trp Gin 275 280 285

Asn Arg Gin Gin Ile Arg Arg Ala Giu Arg Leu Cys Gin Gin Leu Pro 20 290 295 300

11e Pro Gly Pro Val Glu Glu Met Leu Ala Glu Val Asn Ala Thr 11e305310315320

Thr	Asp	lle	He	Ser	Ala	Leu	Val	Thr	Ser	Thr	Phe	He	He	Glu	Lys
				325					330					335	

5 Gin Pro Pro Gin Val Leu Lys Thr Gin Thr Lys Phe Ala Ala Thr Val 340 345 350

Arg Leu Leu Val Gly Gly Lys Leu Asn Val His Met Asn Pro Pro Gln

355 360 365

Val Lys Ala Thr lie lie Ser Glu Gln Gln Ala Lys Ser Leu Leu Lys
370 380

15

20

Asn Glu Asn Thr Arg Asn Glu Cys Ser Gly Glu IIe Leu Asn Asn Cys
385 390 395 400

Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe
405 410 415

25 Arg Asn Met Ser Leu Lys Arg IIe Lys Arg Ala Asp Arg Arg Gly Ala
420 425 430

Glu Ser Val Thr Glu Glu Lys Phe Thr Val Leu Phe Glu Ser Gln Phe
435 440 445

5

Ser Val Gly Ser Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu
450 455 460

10

Pro Val Val Val IIe Val His Gly Ser Gln Asp His Asn Ala Thr Ala 465 470 475 480

Thr Val Leu Trp Asp Asn Ala Phe Ala Glu Pro Gly Arg Val Pro Phe
485 490 495

Ala Val Pro Asp Lys Val Leu Trp Pro Gln Leu Cys Glu Ala Leu Asn
500 505 510

Met Lys Phe Lys Ala Glu Val Gln Ser Asn Arg Gly Leu Thr Lys Glu
515 520 525

20

Asn	Leu	Val	Phe	Leu	Ala	Gin	Lys	Leu	Phe	Asn	He	Ser	Ser	Asn	His
	530					535					540				

5 Leu Glu Asp Tyr Asn Ser Met Ser Val Ser Trp Ser Gln Phe Asn Arg 545 550 555 560

Glu Asn Leu Pro Gly Trp Asn Tyr Thr Phe Trp Gln Trp Phe Asp Gly

565 570 575

Val Met Glu Val Leu Lys Lys His His Lys Pro His Trp Asn Asp Gly

15 580 585 590

20

25

Ala IIe Leu Gly Phe Val Asn Lys Gln Gln Ala His Asp Leu Leu IIe
595 . 600 605

Asn Lys Pro Asp Gly Thr Phe Leu Leu Arg Phe Ser Asp Ser Glu IIe
610 615 620

Gly Gly IIe Thr IIe Ala Trp Lys Phe Asp Ser Pro Asp Arg Asn Leu

10

15

25

625 630 635 640

Trp Asn Leu Lys Pro Phe Thr Thr Arg Asp Phe Ser IIe Arg Ser Leu 645 650 655

Ala Asp Arg Leu Gly Asp Leu Asn Tyr Leu lle Tyr Val Phe Pro Asp

660 665 670

Arg Pro Lys Asp Glu Val Phe Ala Lys Tyr Tyr Thr Pro Val Leu Ala 675 680 685

Lys Ala Val Asp Gly Tyr Val Lys Pro Gln He Lys Gln Val Val Pro
690 695 700

20 Glu Phe Val Asn Ala Phe Thr Asp Ala Gly Ala Ser Ala Thr Tyr Met
705 710 715 720

Asp Gln Ala Pro Ser Pro Val Val Cys Pro Gln Pro His Tyr Asn Met
725 730 735

Tyr Pro Pro Asn Pro Asp Pro Val Leu Asp Gln Asp Gly Glu Phe Asp
740 745 750

5

Leu Asp Glu Ser Met Asp Val Ala Arg His Val Glu Glu Leu Leu Arg
755 760 765

Arg Pro Met Asp Ser Leu Asp Ala Arg Leu Ser Pro Pro Ala Gly Leu
770 775 780

Phe Thr Ser Ala Arg Ser Ser Leu Ser

15 **785**

790

<210> 11

<211> 25

20 **<212> DNA**

<213> Artificial

<220>

<223> consensus

25

<400> 11

gatccgaatt ccaggaattc agatc

25

<210> 12

5 <211> 2382

<212> DNA

<213> Artificial

<220>

10 <221> CDS

<222> (1)..(2382)

<223>

<400> 12

atg gcg ggc tgg att cag gcc cag cag ctt cag gga gat gcc ctg cgc

48

Met Ala Gly Trp lie Gin Ala Gin Gin Leu Gin Gly Asp Ala Leu Arg

1 5 10 15

cag atg caa gtg ttg tat ggg cag cat ttc ccc atc gag gtc cgg cac 96

20 Gin Met Gin Val Leu Tyr Gly Gin His Phe Pro Ile Glu Val Arg His

20 25 30

tac ctg gcc cag tgg atc gag agc cag ccg tgg gat gct att gac ttg

Tyr Leu Ala Gln Trp lle Glu Ser Gln Pro Trp Asp Ala lle Asp Leu

25 35 40 45

	gat	aat	ccc	cag	gac	cga	ggt	cag	gcc	acc	caa	ctc	ctg	gag	ggc	ctg	192
	Asp	Asn	Pro	Gln	Asp	Arg	Gly	Gln	Ala	Thr	Gin	Leu	Leu	Glu	Gly	Leu	
		50					55					60					
5	gtg	cag	gag	ctg	cag	aag	aag	gcg	gag	cac	cag	gtg	ggg	gaa	gat	ggg	240
	Val	GIn	Glu	Leu	Gln	Lys	Lys	Ala	Glu	His	GIn	Val	Gly	Glu	Asp	Gly	
	65					70					75					80	
														•			
	ttt	ttg	ctg	aag	atc	aag	ctg	ggg	cac	tat	gcc	aca	cag	ctc	cag	aac	288
10	Phe	Leu	Leu	Lys	He	Lys	Leu	Gly	His	Tyr	Ala	Thr	Gln	Leu	GIn	Asn	
					85					90					95		
															•		
	acg	tat	gac	cgc	tgt	CCC	atg	gag	ctg	gtt	cgc	tgt	atc	cgt	cac	att	336
	Thr	Tyr	Asp	Arg	Cys	Pro	Met	Glu	Leu	Val	Arg	Cys	lle	Arg	His	lle	
15				100					105					110			
	ctg	tac	aac	gaa	cag	agg	ctg	gtt	cgc	gaa	gcc	aac	aat	tgc	agc	tcc	384
	Leu	Tyr	Asn	Glu	GIn	Arg	Leu	Val	Arg	Glu	Ala	Asn	Asn	Cys	Ser	Ser	
			115					120					125				
20																	
	cct	gct	ggt	gtc	ctg	gtt	gac	gcc	atg	tcc	cag	aag	cac	ctt	cag	atc	432
	Pro	Ala	Gly	Vai	Leu	Val	Asp	Ala	Met	Ser	Gln	Lys	His	Leu	Gln	He	
		130					135					140					
25	aac	caa	agg	ttt	gag	ggg	ctg	cgc	ctg	atc	aca	cag	gac	acg	gag	aac	480
	Asn	Gln	Arg	Phe	Glu	Gly	Leu	Arg	Leu	He	Thr	GIn	Asp	Thr	Glu	Asn	

gag ctg aag aag ctg cag cag acc caa gag tac ttc atc atc cag tac Glu Leu Lys Lys Leu Gin Gin Thr Gin Glu Tyr Phe lie lie Gin Tyr cag gag agc ctg cgg atc caa gct cag ttt gcc cag ctg ggc cag ctg Gin Glu Ser Leu Arg IIe Gin Ala Gin Phe Ala Gin Leu Giy Gin Leu aac ccc cag gag cgc atg agc agg gag acg gcc ctc cag cag aag caa Asn Pro Gin Glu Arg Met Ser Arg Glu Thr Ala Leu Gin Gin Lys Gin gtg tcc ctg gag acc tgg ctg cag cga gag gca cag aca ctg cag cag Val Ser Leu Glu Thr Trp Leu Gin Arg Giu Ala Gin Thr Leu Gin Gin tac cga gtg gag ctg gct gag aag cac cag aag acc ctg cag ctg ctg Tyr Arg Val Glu Leu Ala Glu Lys His Gln Lys Thr Leu Gln Leu Leu cgg aag cag cag acc atc atc ctg gac gag ctg atc cag tgg aag Arg Lys Gin Gin Thr lie lie Leu Asp Asp Glu Leu lie Gin Trp Lys

	cgg	aga	cag	cag	ctg	gcc	ggg	aac	ggg	ggt	ccc	CCC	gag	ggc	agc	ctg	816
	Arg	Arg	Gin	Gln	Leu	Ala	Gly	Asn	Gly	Gly	Pro	Pro	Glu	Gly	Ser	Leu	
			•	260		•			265					270			
5	gac	gtg	ctg	cag	tcc	tgg	tgt	gag	aag	ctg	gcc	gag	atc	atc	tgg	cag	864
	Asp	Val	Leu	Gln	Ser	Trp	Cys	Glu	Lys	Leu	Ala	Glu	He	He	Trp	Gln	
			275					280					285				
	aac	cgg	cag	cag	atc	cgc	agg	gct	gag	cac	ctg	tgc	cag	cag	ctg	CCC	912
10	Asn	Arg	Gln	GIn	lle	Arg	Arg	Ala	Glu	His	Leu	Cys	GIn	Gin	Leu	Pro	
		290					295					300					
									•								
	atc	cca	ggc	CCC	gtg	gag	gag	atg	ctg	gct	gag	gtc	aac	gcc	acc	atc	960
	lle	Pro	Gly	Pro	Val	Glu	Glu	Met	Leu	Ala	Glu	Val	Asn	Ala	Thr	He	
15	305					310					315					320	
	acg	gac	atc	atc	tca _.	gct	ctg	gtc	acc	agc	acg	ttc	atc	atc	gag	aag	1008
	Thr	Asp	He	He	Ser	Ala	Leu	Val	Thr	Ser	Thr	Phe	He	He	Glu	Lys	
					325					330					335		
20																	
	cag	cct	cct	cag	gtc	ctg	aag	acc	cag	acc	aag	ttt	gcg	gcc	acc	gtg	1056
	GIn	Pro	Pro	Gin	Val	Leu	Lys	Thr	Gln	Thr	Lys	Phe	Ala	Ala	Thr	Val	
				340					345					350			
25	cgc	ctg	ctg	gtg	ggg	gga	aag	ctg	aat	gtg	cac	atg	aac	GCC	ccg	cag	1104
	Arg	Leu	Leu	Val	Gly	Gly	Lys	Leu	Asn	Val	His	Met	Asn	Pro	Pro	Gln	

355 360 365

gtg aag gcg acc atc atc agc gag cag gcc aag tcc ctg ctc aag

Val Lys Ala Thr lie lie Ser Glu Gin Ala Lys Ser Leu Leu Lys

370 375 380

5

10

25

aat gag aac acc cgc aat gag tgc agc ggc gag atc ctg aac aac tgt 1200
Asn Glu Asn Thr Arg Asn Glu Cys Ser Gly Glu IIe Leu Asn Asn Cys
385 390 395 400

tgc gtc atg gag tac cac cag gcc act ggc acg ctc agc gcc cac ttc

1248

Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe

405

410

415

aga aac atg tca ctg aaa aga atc aag cgc gcc gac agg cgt ggt gca 1296

Arg Asn Met Ser Leu Lys Arg IIe Lys Arg Ala Asp Arg Gly Ala

420

425

430

gag tog gtg acg gag gag aag ttc aca gtc ctg ttt gag tct cag ttc 1344

20 Glu Ser Val Thr Glu Glu Lys Phe Thr Val Leu Phe Glu Ser Gln Phe

435 440 445

agc gtt ggc agc aac gag ctg gtg ttc cag gtg aag acc ctg tcc ctc

1392

Ser Val Gly Ser Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu

450

455

460

•	cct	gtg	gtc	gtt	atc	gtc	cat	ggc	agc	cag	gac	cac	aat	gct	act	gcc	1440
	Pro	Val	Val	Val	lle	Val	His	Gly	Ser	Gin	Asp	His	Asn	Ala	Thr	Ala	
	465					470	-				475					480	
5	acc	gtg	ctg	tgg	gac	aat	gcc	ttt	gct	gag	ccg	ggc	agg	gtg	cca	ttt	1488
	Thr	Val	Leu	Trp	Asp	Asn	Ala	Phe	Ala	Glu	Pro	Gly	Arg	Val	Pro	Phe	
					485					490					495		
													•				
	gct	gtg	cct	gac	aag	gtg	ctg	tgg	ccg	cag	ctg	tgt	gaa	gcg	ctc	aac	1536
10	Ala	Val	Pro	Asp	Lys	Val	Leu	Trp	Pro	Gln	Leu	Cys	Glu	Ala	Leu	Asn	
				500					505					510			
	atg	aaa	ttc	aag	gct	gaa	gta	cag	agc	aac	cgg	ggc	ttg	acc	aaa	gag	1584
							Val										
15		_, _	515	_, -				520					525				
13			0.0					0.0									
		a ta	-+ ·	++-	.+~	~~	000		ot#	++0	000	ato	940	ago	000	000	1632
							cag										1002
	ASI		vai	Pne	Leu	міа	Gin	Lys	Leu	rne	ASII		Set	ser	ASII	nis	
		530					535					540					
20																	
	ctc	gag	gac	tac	aac	agc	atg	tct	gtg	tcc	tgg	tcc	cag	ttc	aac	cgg	1680
	Leu	Glu	Asp	Tyr	Asn	Ser	Met	Ser	Val	Ser	Trp	Ser	Gln	Phe	Asn	Arg	
	545					550					555					560	
25	gag	aac	ttg	ccc	ggc	tgg	aac	tac	acc	ttc	tgg	cag	tgg	ttc	gac	ggg	1728
	Glu	Asn	Leu	Pro	Gly	Trp	Asn	Tyr	Thr	Phe	Trp	Gln	Trp	Phe	Asp	Gly	

565

5

10

25

gtg atg gag gtg ctg aag aag cac cat aag ccc cat tgg aat gat ggg 1776

Val Met Glu Val Leu Lys Lys His His Lys Pro His Trp Asn Asp Gly

580 585 590

570

gct atc ctg ggt ttc gtg aac aag caa cag gcc cac gac ctg ctc atc

1824

Ala lie Leu Gly Phe Val Asn Lys Gin Gin Ala His Asp Leu Leu lie

595

600

605

aac aag ccg gac ggg acc ttc ctg ctg cgc ttc agt gac tcg gaa atc

1872

Asn Lys Pro Asp Gly Thr Phe Leu Leu Arg Phe Ser Asp Ser Glu IIe

610
615
620

ggg ggc atc acc att gct tgg aag ttt gac tct ccg gac cga aac ctc 1920
Gly Gly Ile Thr Ile Ala Trp Lys Phe Asp Ser Pro Asp Arg Asn Leu
625 630 635 640

tgg aat ctg aag cca ttc acg acg cga gat ttc tcc att cgg tcc ctg 1968

20 Trp Asn Leu Lys Pro Phe Thr Thr Arg Asp Phe Ser IIe Arg Ser Leu
645 650 655

gcc gac cgg ctg ggg gac ctg aac tac ctt atc tac gtg ttc cca gac 2016

Ala Asp Arg Leu Gly Asp Leu Asn Tyr Leu ile Tyr Val Phe Pro Asp

660 665 670

	cga	CCC	aag	gac	gag	gtc	ttt	gcc	aag	tat	tac	act	cct	gta	ctt	gcg	2064
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	Lys	Ala	Val	Asp	Gly	Tyr	Val	Lys	Pro	GIn	lle	Lys	GIn	Val	Val	Pro	
		690					695					700					
	gag	ttc	gtc	aat	gca	ttc	aca	gat	gcc	gga	gcc	agc	gcc	acc	tac	atg	2160
10	Glu	Phe	Val	Asn	Ala	Phe	Thr	Asp	Ala	Gly	Ala	Ser	Ala	Thr	Tyr	Met	
	705	•				710					715					720	
	gac	cag	gct	cct	tcc	cca	gtc	gtg	tgc	cct	caa	cct	cac	tac	aac	atg	2208
	Asp	GIn	Ala	Pro	Ser	Pro	Val	Val	Cys	Pro	Gln	Pro	His	Tyr	Asn	Met	
15					725					730					735		
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	Tyr	Pro	Pro	Asn	Pro	Asp	Pro	Val	Leu	Asp	Gin	Asp	Gly	Glu	Phe	Asp	
				740					745					750			
20																	
	ctg	gat	gag	agc	atg	gat	gtt	gcc	agg	cac	gtg	gaa	gaa	ctt	tta	CgC	2304
	Leu	Asp	Glu	Ser	Met	Asp	Val	Ala	Arg	His	Vai	Glu	Glu	Leu	Leu	Arg	
			755					760					765				
25	cgg	ccc	atg	gac	agt	ctc	gac	gcc	cgc	ctc	tcc	cca	cct	gct	ggt	ctc	2352
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780

91/99

775

ttc acc tcc gct aga agc tcc ctg tcc tga 2382

Phe Thr Ser Ala Arg Ser Ser Leu Ser

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Gin Met Gin Val Leu Tyr Gly Gin His Phe Pro Ile Glu Val Arg His

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Tyr Leu Ala Gin Trp lie Giu Ser Gin Pro Trp Asp Ala lie Asp Leu
35 40 45

Asp Asn Pro Gin Asp Arg Gly Gin Ala Thr Gin Leu Leu Glu Gly Leu
50 55 60

5 Val Gin Giu Leu Gin Lys Lys Ala Giu His Gin Val Giy Giu Asp Giy 65 70 75 80

Phe Leu Leu Lys IIe Lys Leu Gly His Tyr Ala Thr Gln Leu Gln Asn
85 90 95

10

15

20

Thr Tyr Asp Arg Cys Pro Met Glu Leu Val Arg Cys IIe Arg His IIe

100 105 110

Leu Tyr Asn Glu Gln Arg Leu Val Arg Glu Ala Asn Asn Cys Ser Ser

115 120 125

Pro Ala Gly Val Leu Val Asp Ala Met Ser Gln Lys His Leu Gln Ile
130 135 140

Asn Gin Arg Phe Glu Gly Leu Arg Leu IIe Thr Gin Asp Thr Glu Asn
145 150 155 160

Glu Leu Lys Lys Leu Gin Gin Thr Gin Glu Tyr Phe lie lie Gin Tyr

165 170 175

5

Gin Glu Ser Leu Arg Ile Gin Ala Gin Phe Ala Gin Leu Gly Gin Leu
180 185 190

10

25

Asn Pro Gin Giu Arg Met Ser Arg Giu Thr Ala Leu Gin Gin Lys Gin
195 200 205

15 Val Ser Leu Glu Thr Trp Leu Gln Arg Glu Ala Gln Thr Leu Gln Gln
210 215 220

Tyr Arg Val Glu Leu Ala Glu Lys His Gln Lys Thr Leu Gln Leu Leu 20 225 230 235 240

Arg Lys Gin Gin Thr lie lie Leu Asp Asp Giu Leu lie Gin Trp Lys

245 250 255

25

Arg Arg Gin Gin Leu Ala Gly Asn Gly Gly Pro Pro Glu Gly Ser Leu
260 265 270

5 Asp Val Leu Gin Ser Trp Cys. Glu Lys Leu Ala Giu IIe IIe Trp Gin 275 280 285

Asn Arg Gln Gln lle Arg Arg Ala Glu His Leu Cys Gln Gln Leu Pro
290 295 300

11e Pro Gly Pro Val Glu Glu Met Leu Ala Glu Val Asn Ala Thr lle 15 305 310 315 320

Thr Asp IIe IIe Ser Ala Leu Val Thr Ser Thr Phe IIe IIe Glu Lys
325 330 335

Gln Pro Pro Gln Val Leu Lys Thr Gln Thr Lys Phe Ala Ala Thr Val
340 345 350

Arg Leu Leu Val Gly Gly Lys Leu Asn Val His Met Asn Pro Pro Gln

10

15

355 360 365

Val Lys Ala Thr lle lle Ser Glu Gln Gln Ala Lys Ser Leu Leu Lys
370 375 380

Asn Glu Asn Thr Arg Asn Glu Cys Ser Gly Glu He Leu Asn Asn Cys
385 390 395 400

Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe
405 410 415

Arg Asn Met Ser Leu Lys Arg IIe Lys Arg Ala Asp Arg Gly Ala
420 425 430

20 Glu Ser Val Thr Glu Glu Lys Phe Thr Val Leu Phe Glu Ser Gln Phe
435 440 445

Ser Val Gly Ser Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu 25 450 455 460

Pro Val Val Val IIe Val His Gly Ser Gln Asp His Asn Ala Thr Ala 465 470 475 480

Thr Val Leu Trp Asp Asn Ala Phe Ala Glu Pro Gly Arg Val Pro Phe
485 490 495

5

20

25

10 Ala Val Pro Asp Lys Val Leu Trp Pro Gin Leu Cys Giu Ala Leu Asn
500 505 510

Met Lys Phe Lys Ala Glu Val Gin Ser Asn Arg Gly Leu Thr Lys Glu

515 520 525

Asn Leu Val Phe Leu Ala Gln Lys Leu Phe Asn Ile Ser Ser Asn His
530 535 540

Leu Glu Asp Tyr Asn Ser Met Ser Val Ser Trp Ser Gin Phe Asn Arg
545 550 555 560

Glu Asn Leu Pro Gly Trp Asn Tyr Thr Phe Trp Gln Trp Phe Asp Gly

Val Met Glu Val Leu Lys Lys His His Lys Pro His Trp Asn Asp Gly

Ala Ile Leu Gly Phe Val Asn Lys Gln Gln Ala His Asp Leu Leu Ile

Asn Lys Pro Asp Gly Thr Phe Leu Leu Arg Phe Ser Asp Ser Glu IIe

Gly Gly Ile Thr Ile Ala Trp Lys Phe Asp Ser Pro Asp Arg Asn Leu

Trp Asn Leu Lys Pro Phe Thr Thr Arg Asp Phe Ser Ile Arg Ser Leu

Ala Asp Arg Leu Gly Asp Leu Asn Tyr Leu Ile Tyr Val Phe Pro Asp

Arg Pro Lys Asp Glu Val Phe Ala Lys Tyr Tyr Thr Pro Val Leu Ala 675 680 685

5

Lys Ala Val Asp Gly Tyr Val Lys Pro Gln IIe Lys Gln Val Val Pro 690 695 700

10

Glu Phe Val Asn Ala Phe Thr Asp Ala Gly Ala Ser Ala Thr Tyr Met
705 710 715 720

15

Asp Gln Ala Pro Ser Pro Val Val Cys Pro Gln Pro His Tyr Asn Met
725 730 735

Tyr Pro Pro Asn Pro Asp Pro Val Leu Asp Gin Asp Giy Giu Phe Asp
740 745 750

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Leu Asp Glu Ser Met Asp Val Ala Arg His Val Glu Glu Leu Leu Arg
755 760 . 765

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Arg Pro Met Asp Ser Leu Asp Ala Arg Leu Ser Pro Pro Ala Gly Leu

775

780

Phe Thr Ser Ala Arg Ser Ser Leu Ser

5 785

790